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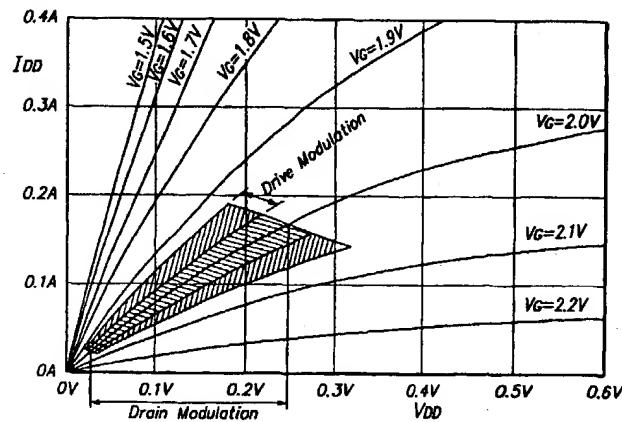
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(54) Title: COMMUNICATIONS SIGNAL AMPLIFIERS HAVING INDEPENDENT POWER CONTROL AND AMPLITUDE MODULATION



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(57) Abstract: The present invention, generally speaking, provides methods and apparatus for producing an amplitude modulated communications signal, in which a constant-envelope carrier signal is modified in response to a power control signal (204) to produce a modified constant-envelope carrier signal. The modified constant-envelope carrier signal is amplified in response to an amplitude modulation signal (207) to produce a communications signal having amplitude modulation and having an average output power proportional to a signal level of the modified constant-envelope carrier signal. This manner of operation allows wide dynamic range of average output power to be achieved. Because amplitude modulation is applied after amplitude varying circuitry (303) used to produce the modified constant-envelope carrier signal, the amplitude modulation is unaffected by possible non-linearities of such circuitry. In accordance with another aspect of the invention, operation in the foregoing manner at comparatively low average output power levels is combined with switchmode operation at comparatively high average output power levels, enabling high overall efficiency to be achieved. Hence, the disclosed modulator and amplifier combination, in addition to supporting very low power signals, also supports high power signals.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 02/11776

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H03G3/00 H03F1/02 H03F1/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 48307 A (MCCUNE EARL W ;TROPIAN INC (US)) 17 August 2000 (2000-08-17)	1-6, 11-16, 19-22, 26,27
Y	page 4, line 3-18; figures 2,9 page 11, line 27 -page 12, line 14	7-10,17, 18, 23-25, 28-47
Y	US 6 069 525 A (Camarillo Richard J ET AL) 30 May 2000 (2000-05-30)  column 3, line 40 -column 4, line 63; figure 1	7-10,17, 18, 23-25, 28-47
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Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 251 331 A (OSMANI RASHID M ET AL) 5 October 1993 (1993-10-05) column 4, line 4-65; figure 2 _____	1-47
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**INTERNATIONAL SEARCH REPORT**

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